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ABSTRACT

This paper discusses the importance and usefulness of assessing student goal attainment, reviews the steps required to select intervention goals, and describes several goal attainment measurement systems. Practical difficulties which are likely to be encountered are described and potential solutions to those difficulties are discussed. The importance of support from the school administration is emphasized. The selection of appropriate goals and goal attainment measures to allow judgments to be made about the social and educational values of the treatment procedures is reviewed. Suggestions are made in terms of the roles of psychologists, e.g., they should set standards within educational systems while attempting to evaluate their own effectiveness. (JAC)

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OUTCOME EVALUATION OF PSYCHOLOGICAL SERVICES IN THE SCHOOLS

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OUTCOME EVALUATION OF PSYCHOLOGICAL SERVICES
IN THE SCHOOLS

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OUTCOME EVALUATION OF PSYCHOLOGICAL SERVICES IN THE SCHOOLS

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Recent pressures for fiscal and program accountability have led to the expansion of program evaluation activities in education. These pressures have arisen from governmental funding agencies, legislatures, consumers and community leaders as well as within the educational system itself. Program evaluation activities can be divided into two categories, those which are process oriented, measuring the degree of utilization of services (e.g., the number of students in programs) and those which are outcome oriented, measuring the effectiveness of the services provided. Most program evaluation activities have been process oriented, probably, at least in part, because the relevant data are comparatively easy to collect. However, process oriented evaluation, alone, is considered appropriate only when program standards are agreed upon. The current emphasis in program evaluation seems to be shifting from process to outcome oriented evaluation (e.g., Hagedorn, Beck, Newbert & Werlin, 1976).

The usual method for assessing the effectiveness of a program as a whole is to measure the degree of change experienced by each student in the program and then to combine the individual measures into a single descriptive statistic, e.g., a mean change score. Individual measures of change fall within three categories. Most measures are simply designed

to find out whether a student changed during intervention, e.g., pre-post global ratings of the overall level of functioning. Much less frequently, measures are designed to find out whether a student changed as a result of intervention, as in some single subject designs. More recently, measures have been designed which could determine if a student changed enough during intervention to produce a significant improvement in his or her everyday functioning (Kazdin, 1979). The latter are called goal attainment measures. The indicant of success is the difference between the level of the behavior and a goal for that behavior which was selected prior to intervention rather than (as in the case for the first two measures) the difference between the level of the behavior after intervention and its baseline level.[1] Given a wise choice in goals, goal attainment measures allow a judgment to be made about the social and educational value of the treatment procedures which cannot be made with measures in the first two categories.

This paper discusses the importance and usefulness of assessing student goal attainment, reviews the steps required to select intervention goals and describes several goal attainment measurement systems. Practical difficulties which are likely to be encountered are described and potential solutions to those difficulties are discussed. Finally, the importance of the support of the school administration is emphasized.

Why Assess Goal Attainment

Obviously, whether services rendered have the desired effect is at the core of ethical practice for any professional. Do school psychologists design effective intervention programs? Do their services lead to an

improvement in student classroom behavior? While psychologists will vary in skills needed to evaluate client outcome, all have had exposure to basic evaluation methodology by virtue of their training in experimental design. For those utilizing behavior analysis, evaluation is a constant component of intervention. The discipline of psychology is fortunate to have the technology available to address the efficacy of its efforts. Psychologists have chosen to be a part of the frequently difficult move to accountable procedures, and now must also serve as models to others within the educational system. It is reassuring to be setting the standard within educational systems at the same time we are attempting to evaluate our own effectiveness.

Major additional advantages result from goal setting and monitoring procedures. The first is their usefulness to the individual psychologist in current and future case planning. The procedures provide a framework for the systematic gathering of data. From this data pool the psychologist can analyze the parameters of successful intervention. For example, time to reach, criterion can be compared across type of referral problem, treatment design, personnel involved, and program procedures.

The structure necessary for gathering treatment effectiveness data may also improve the likelihood that intervention programs will be successful. The required schedule of contacts to gather evaluation information increases the likelihood of interaction between the teacher/parent and psychologist around the progress of the child being treated. The chances are less that programs simply die on the vine for lack of attention. Additionally, experimental evidence suggests that clients make more therapeutic gains when they and their therapists are involved in goal

setting and monitoring procedures than when they are not (Calsyn, Tornatzky, & Dittmar, 1977; Weinstein & Ricks, 1977; Galano, 1977; Houts & Scott, 1975-76; Jones & Garwick, 1976; LaFerriere & Calsyn, 1978; Smith, 1976; Willer, 1975-76).

Feedback relative to student improvement may serve to maintain the necessary helping behaviors of the psychologist, and other personnel in the treatment program. Progress made obvious is a powerful force and any procedure that facilitates that display is desirable.

Service effectiveness data can be used by supervising pscyhologists to improve the quality of their supervision. Too often the supervising psychologist lacks information about the skills of those being supervised. This is at least partially because of difficulties in observing frequently enough or, indeed, at all. The information provided by case effectiveness data can be used as a teaching device, allowing supervision to be structured around the demonstrated strengths of the supervised psychologists as well as around those skills which need improvement.

Finally, a procedure for combining case data for all psychologists within a psychological services delivery unit could be incorporated into evaluation reports for the psychological services department, the special education department, or for the school system as a whole. Statistics for individual psychologists would not be reported, but intervention program effectiveness throughout the system could be documented. The compilation of such documentation could be used to support needed changes, e.g., the minimal student/psychologist ratio to allow effective interventions.

The advantages of assessing goal attainment are clear. What remains is to select a system for doing so which will be workable within the school system.

Preliminary Steps

The teacher who refers a child to the school psychologist will oftentimes specify the child's problem in very general terms, for example, the child may have a poor self-concept or be hyperactive. The first step for the psychologist is to recast the problem in terms of behaviors or outcomes which are measurable and which can serve as indicators of the success or failure of the intervention program, whatever form that program may take.

Several rules of thumb are useful in selecting behaviors which will serve as indicators of success. (1) It is usually, although not always, better to specify behaviors and outcomes which should be increased rather than decreased. When a child is experiencing a problem coping with a particular situation, a decrease in his or her inappropriate behavior may leave the child without an appropriate coping behavior. For example, it is better if a student learns to respond constructively in a frustrating academic situation (e.g., to ask the teacher for help) than if he or she learns not to swear in that same situation. (2) It is better to select indicators which are of benefit to both the child and the teacher. If a child learns to be in-seat more of the time, it only benefits the teacher; if he or she learns to be on-task more of the time, it benefits them both (Winett & Winkler, 1972). One or several indicators may be necessary to evaluate the success of a given treatment program. The indicators selected for one child may be different from the indicators selected for another even though the referral problems were similar.

Examples of indicators of success or failure associated with self-concept problems would include: initiating conversations with others,

persisting at tasks rather than giving up too easily, joining in games at recess, choosing to sit next to someone in the lunch room and being chosen by other children as a partner or a team member. (The first four indicators are behaviors, the last is an outcome measure.) An indicator which might be decreased is making derogatory self-statements; it is unlikely you would wish to increase the opposite behavior since children who brag a great deal are often shunned by other children. Indicators of success associated with hyperactivity might include: increasing on-task behavior, math scores, following instructions and talking about appropriate topics or decreasing interrupting.

After behaviors and outcomes are selected as indicators of treatment success, the means of measuring them must be selected. Either the teacher may measure them or, in some instances, the student may be able to do so. The teacher could count the number of times a behavior occurred, e.g., teacher may measure them or, in some instances, the student may be able to do so. The teacher could count the number of times a behavior occurred, e.g., the number of times each week a child sat next to someone in the lunch room; or clock the duration of a behavior on a cumulating stop watch, e.g., on-task behavior; or do time sampling, e.g., the teacher might look up every 15 minutes during the day and note whether a child was talking and, if so, whether he or she was talking about appropriate topics. A student could record the percent correct he or she earned on math papers and might also be able to do time sampling, e.g., every time a bell went off the student could score him or herself as being either on- or off-task.

Once the measurement system is decided upon for a given indicator then an objective for each must be selected within the context of that

system. The objective is the level the child's behavior would have to reach for the teacher and psychologist to agree that the original problem was ameliorated. Sometimes the teacher and psychologist can arbitrarily decide on an objective. This is often true when the indicator of success is a behavior which should be decreased; teacher and psychologist may simply agree that a child should never swear, never destroy property, never hit other children and so forth. However, selecting objectives for some indicators can be difficult. Consider the behavior of persisting in tasks. It is obvious that a child needs to persist in tasks to some degree before asking for help in order to be a successful student, however there are limits beyond which persistance is no longer a virtue but becomes a handicap. We call these people stubborn or perseverative. The right amount of persistence depends upon a host of variables including the child's age, the nature of the task and so forth.

In general, there are two ways to decide how much of a given indicator is ideal. One is to measure the behavior and/or outcomes of a child who is evaluated by his teacher as being average on a given dimension, or at least not in need of treatment (Kazdin, 1979). This method is probably very good for behavior problems like interrupting. If a non-problem child in the class interrupts an average of ten times per day, then that may be the objective set for the problem child. Another is to observe the behavior of the child who is evaluated as competent in respect to that dimension (Van Houten, 1979). This method is especially well suited for academic problems. If a competent child averages 85% correct on math papers, that may be the objective set for the problem child. A child who attained objectives set by these methods would probably function well in the classroom with respect to those behaviors.

So far we have discussed collecting normative data in the problem child's own classroom. These data may often be compared to, or supplemented by, data collected on a larger scale. Data have been collected pertaining to the frequency of deviant and/or appropriate behavior of children in various grades in an entire school system (e.g., Greenwood, Hope, Walker, Guild, Stokes, Young, Keleman & Willardson, 1979; Greenwood, Note 1) and in families across an entire community (e.g., Johnson, Wahl, Martin, & Johansson, 1973). Although data collected on this scale are just beginning to be reported, they are proving to be very useful and will probably be collected more extensively in the future. Norms from behavior checklists such as the Devereux Elementary School Behavior Rating Scale may also provide comparative information. Normative data related to academic achievement are readily available from standardized normed tests such as the Woodcock Reading Mastery Test. Sometimes local classroom normative data may not be consistent with normative data collected on the larger scale. For example, consider the child who is targeted as off-task in a class in which the average child is off-task 50% of the time compared to a national norm of 20%. In cases where the setting does not support the target behavior very well, it will be necessary to alter the classroom conditions in general, before focusing on a particular child (Nelson & Bowles, 1975).

It may not be realistic to think that a school psychologist functioning under current conditions, would have the time or situational control to turn problem children into ideal children. It may be more realistic to set objectives at that level which would make children acceptable, keeping them in their current classrooms and increasing the likelihood that they would function in the least restrictive setting. In other

words, sometimes the most realistic objective for a child is that level of behavior that the teacher will agree is, at least, tolerable. Then the psychologist would not be likely to set 95% correct on math papers as an objective for a failing child (although he or she might be perfectly capable of earning those scores with the proper treatment program). Instead the objective might be set at earning a mean of 75% correct each week, if the teacher thought that would be acceptable. It would be best if the level of behavior chosen as a child's objectives would be that level which would allow him/her to function optimally in the classroom environment. If practical constraints preclude this, the child's objectives should at least be that level of behavior which would allow him or her to successfully remain in the current environment.

After the child's objective is selected it must be compared to his or her current behavior. The teacher may be surprised to find that a child whom she thought had a particular behavior problem is already functioning at the objective for that dimension, i.e., the problem may have been identified incorrectly. For example, a child who was thought never to start assignments on time, may in fact have been starting on time just as often as the other children. Perhaps, however, he or she was unable to sustain a long enough effort to complete them.

Once it is ascertained that a student does have a problem in relation to the chosen objective, a timeline for intervention should be established. The timeline is an estimate of how long the child should take to reach the objective with an adequate intervention program. No index is yet available to provide a realistic estimate of the length of time it might

take a child with specified characteristics and with a particular baseline rate of behavior to reach a particular objective, providing certain intervention procedures were implemented. Nevertheless, the psychologist does have past experience as a resource for making this estimate. It is also possible to examine similar cases reported in the literature or in school files and to note the duration of intervention procedures. Normed developmental scales, e.g. The Portage Guide to Early Education, and skill sequence tables (Kozloff, 1974) may provide information regarding the prerequisite behaviors which must be established before the identified problem can be targeted for intervention. To the extent that prerequisite behaviors must be taught, the timeline must be lengthened. Since direct implementation is ordinarily the responsibility of the teacher the psychologist lacks control over a number of variables which could affect the time needed to achieve an objective. These variables have to do with the teacher's ability to cooperate, the behavior of the other children in the class, the parent's willingness to cooperate and so forth. Appendix A is a checklist designed to give the psychologist an idea of whether these variables are working for or against treatment success in a particular case. The timeline can be lengthened or shortened accordingly.

Intervention may begin once the indicators of success for the referral problem, a system for measuring them, an objective and a timeline have been selected. Intervention could take any form, e.g. it could be weekly counseling, a token system, talking to parents or giving a child special tutoring. Whatever the intervention, its success or failure will be ascertained by comparing the level of the indicator behavior after treatment to the objective selected for that indicator before treatment.

Measuring Goal Attainment

A number of systems for evaluating the success of a student's treatment in relation to objectives have been developed, some within school systems, others in mental health clinics or residential facilities. Each system has its own particular advantages and disadvantages. Any goal attainment system may be modified to fit the special circumstances of a given school district.

In the simplest goal attainment system, the psychologist simply notes whether or not an objective has been met on the last day of the timeline. The Monthly Behavioral Progress Record (Liberman, Note 2) is an example. In this particular system, timelines are arbitrarily set at one month intervals and objectives are designed to reflect the amount of change the psychologist might reasonably expect to see in that time. Weekly sub-objectives are also selected. Suppose the teacher is concerned about a child's self-concept. The psychologist would first have to decide what observable changes in the child would let them know when her self-concept had improved. Perhaps sitting next to someone at lunch and talking to them at least once would be selected as a monthly objective. Weekly objectives might be that the child: smile at another student in the lunch line at least once each day (week 1), talk to someone in the lunch line at least once each day (week 2), sit next to someone at lunch each day (week 3), and sit next to someone and speak to them at least once each day (week 4). If the child managed to meet the objectives for weeks 1 and 2, but failed weeks 3 and 4, goal attainment would be 50%. The data collected by the school administration would be the percentage of all objectives set by all psychologists within the school system which were attained on time.

In the example above, objectives were stated in terms of a series of different behaviors which escalated in their apparent difficulty.

Objectives can also be stated in terms of improvements in a single behavior. For example, a psychologist and teacher might agree that the objective for a particular student should be that he start working on an assignment within 1 minute of the teacher giving him instructions to do so, on at least 80% of the assignments given in one week. This is the monthly objective. If the child had never started an assignment within one minute during baseline, then the weekly objectives might be that he or she start 20% of the assignments within 1 minute during week 1; 40% during week 2; 60% during week 3; and 80% during week 4.

A particular advantage of the monthly behavioral progress record is that the psychologist and teacher get feedback on the students progress at the end of each week rather than at the end of a month or some longer period of time. If the objectives for week 1 or 2 are not attained, it becomes obvious that the final objective is in jeopardy. Since the psychologist is cued early in treatment that some aspect of the program must be changed, it is possible for the teacher and student to avoid a lengthy failure experience.

One of the problems with this system is that the psychologist and teacher get no credit for changes which almost, but don't quite, meet the objective or for behavior changes which far exceed the objective. In the examples above they would get no extra credit if the young man started working one minute after the assignment was given 15% of the time the first week, 35% the second week and so on; nor would they get any credit if the child sat down at lunch and kept up a non-stop, animated conversation with everyone sitting at his/her lunch table.

A slightly more complicated system which avoids this problem was developed within a school system (Tomlinson, 1973). First, objectives

were selected for various target behaviors. Next, the length of time in which each objective could reasonably be expected to be met was determined. When each timeline came due, the degree of behavior change was rated by the psychologist on the following scale:

1. behavior reached and maintained at the desired level
2. behavior changed significantly in the desired direction but further change was desired
3. no significant change in the behavior occurred
4. the behavior changed in an undesired direction

Suppose a student had problems in staying on-task and in lining up quickly after recess. Objectives might be that he be able to stay on-task for 15 minutes whenever he was given the instruction to start working and that he be in line within one minute after the bell had been rung. The timelines for these objectives might be 25 and 10 school days respectively. Each behavior would be rated at the end of its timeline on the rating scale above. The data collected by the school administrators would be the percent of all objectives set by all school psychologists which fell into each of the four categories.

A problem for this system, at least in those cases where the timelines are fairly lengthy, is the lack of formal evaluation of student progress until the timeline is up. For example, if a timeline were 6 months long, then the degree of behavior change might not be formally assessed until 6 months had passed. If the rating at that time was "behavior changed in an undesired direction," then six valuable months in which remedial steps could have been taken would have been wasted. However, this problem could be minimized if the psychologist had access to the student's data during the entire treatment period. An analysis of the

treatment data would indicate whether the child was progressing at a rate which would insure that the objective was achieved by the end of the timeline. There are several ways this could be accomplished. After treatment has been in progress for some time, the number of days it would take to achieve an objective, given a continuation of the same rate of improvement, could be calculated using a formula of linear trends (Diamond, Note 3) or a rough projection line of expected progress could be extrapolated on a graph using the split middle or other similar techniques (White, Note 4). An alternative solution is to draw a straight line on the student's graph from the level of behavior on the first day of treatment to the desired objective on the last day of the timeline. Data points which fall below the line (on an acceleration project) would indicate the child was not progressing rapidly enough (Lloyd, Mitchell, Realon & McKinney, 1981).

A combination of the Monthly Behavioral Progress Record and the Tomlinson system might be ideal; sub-objectives could be rated on the four point scale. If several consecutive sub-objectives were rated 3 or 4, the treatment program could be altered (as well as the remaining sub-objectives since the timeline would probably have to be extended). A record keeping system for this system is to be found in Appendix B. Potential problems with the adequacy of the treatment program could be picked up soon enough to prevent undesirable consequences occurring to the student, e.g., being shifted to a remedial classroom, and psychologists would get credit when students almost attained or far exceeded their objectives. The data collected by school administrators would be the percent of all objectives set by all psychologists which were rated 1, 2, 3 or 4.

The credibility of either of the goal attainment systems described here would be reduced if only the psychologist was involved in rating whether the objective had been attained. The psychologist could easily have a vested interest in reporting progress and might see it where, in fact, it didn't exist. Requiring the teacher and the psychologist to agree on the students' ratings would remedy this.

Other goal attainment systems measure the percentage of each objective that is attained, Rinn's Goal Attainment System (Rinn, Vernon & Wise, 1975), give global measures of a client's progress in relation to several objectives at one time, (Goal Attainment Scaling (Garwick, 1976; Kiresuk and Sherman, 1968), or produce daily evaluations of client progress, the Projection Line System (Lloyd, Mitchell & Realon, 1981). These systems may be too time consuming to be appropriate to the school psychologist under current conditions in the schools. Nevertheless these systems have very important features which individual psychologists may find useful and therefore the references are included here and brief descriptions of each are to be found in Appendix C. Several goal attainment systems, including these, are evaluated elsewhere (Lloyd, in press).

It may be tempting to simplify the goal attainment measurement system by omitting the timeline and calculating goal attainment at the termination of the intervention program and/or the end of the school year. This should be resisted if at all possible. If a child's objective is to be on-task 50% of the time during the school week within six week's time, goal attainment should be calculated at the end of the sixth week, even if the objective has not been reached rather than at termination of treatment. To put this argument another way, 100% of a child's objective achieved in six weeks represents better service than

100% of the objective achieved at a later date and this difference should be reflected in the goal attainment statistic.

Difficulties in Implementation

The ethical advantages to such effectiveness monitoring systems are clear, however these procedures are not recommended without an understanding of the difficulties in their implementation. Those difficulties do not result from the technical difficulties of the procedures nor from programming disadvantages in their application. The obstacles to implementation are in the school systems and role definitions within which the psychologist functions. The most obvious problem is time. The amount of time necessary "to do it right" is a constant negative factor. Most school psychologists receive more referrals than they can reasonably serve, and although the ratio of psychologist to students is more favorable in Iowa than in many states, it remains unrealistically large for effective programming. Time is inadequate for data collection of the most minimal rigorousness in many settings.

The contact schedule for most psychologists working in the schools is another obstacle to program implementation. Most psychologists have contact only once a week with each school and it is difficult to rearrange schedules to alter that. The chances that data collection will be accurate and that program implementation will be correct would be greatly increased if more time, e.g. several days in a row, could be committed to an intervention program, especially in its beginning stages. Contact which occurs only once a week and is of short duration makes one dependent on unrealistically tight systems of design and on an intervention partner(s) whose reinforcement history or current environment maintains programming efforts.

It is also recognized that the psychologist often lacks necessary control over program design and implementation. For many programs someone else collects data and is the direct modifier of behavior. There are only social contingencies over the behavior of teachers, aides, and other support personnel. Psychologists have little access to teacher reinforcers. Teachers who frequently encounter management difficulties may have an assortment of behaviors that have interfered with their effective performance in the past. The negative social consequences that have resulted from these problems may not make the reception for the psychologist a warm one. In almost all instances more work is being requested of the teacher, often to help a child who is associated with aversive events for the teacher. The hesitancy of a teacher to follow through on procedures for which he or she has no theoretical appreciation is to be understood. Time must be allowed for a teacher to learn the new discriminations necessary for effective data collection and correct response consequation. It is very difficult to provide enough training, enough supervision and enough help from the position of a periodically present consultant. It may require substantial time to simply create an environment likely to maintain a cooperative venture between teacher and psychologist.

Most school systems do not focus on assessing behavior changes in specific children. Psychologists are not reinforced for those behavioral repertoires most directly related to effective intervention design. Those behaviors are rarely recognized or defined by the systems in which they work.

Suggestions

The most desirable solution to most of these problems is to reduce the number of buildings each psychologist must serve. It is also wise to limit the number of intervention programs per building. As requirements for successful intervention programs become understood in educational systems, the need to limit the number of referrals will become clear.

The psychologist must realistically determine the amount of time necessary to design, implement and monitor programs prior to making commitments. Beginning programs that eventually fail because of a lack of time to monitor them is not professionally responsible. It is advisable to attempt goal setting/monitoring only with teachers who have already demonstrated their cooperativeness or only with cases at the very top of the building priority list.

How can teachers be encouraged to cooperate with problem solutions that almost always result in an increased expenditure of time and work? The first suggestion is to simplify all procedures as much as is feasible. It is wise to provide as much direct help as possible. Be specific in descriptions of the behavior requested of the teacher, provide the forms most appropriate to use, give research articles relating to similar procedures. Using psychological aides could ease the problem. If good data collection systems are designed, aides can be easily trained in their use. The employment of self-management and self-control programs when appropriate, may also help, i.e. students may gather and chart their own data.

The second suggestion is to provide reinforcers for teachers. If the teacher collects the raw data, the psychologist might chart it weekly and review it with the teacher as a means of providing positive feedback.

In most environments, program maintenance depends on frequency of teacher contact. Increase the frequency of social reinforcement to intervention implementers. Increase the power of that social reinforcement by giving praise in the presence of others, particularly the principal. Find something to reinforce during every interaction, commenting on the appearance or organization of the room, if nothing else.

It may be possible to institute a system-wide or school level newsletter with descriptions of teacher efforts and successes or contribute to an existing newsletter in the building or school district. Teachers who initiate and cooperate in goal setting/monitoring procedures might be relieved of other building level responsibilities.

Examples of materials in a monitoring system currently in use are included. Appendix D represents a wall chart used to track all children referred to the psychologist in an individual school. This chart is a modified version of one designed by Dr. Galen Allessi, Michigan State University, Kalamazoo, Michigan. Children referred are listed down the left side of the chart. If the chart is hung in a portion of the building to which the general public has access, it is best that the names be recorded in a coded form or that the chart be covered in some fashion. That restriction is to comply with confidentiality requirements of PL 94-142. Depending upon the facilities in each office that may be more or less difficult. Charts have been hung on the inside of office closet doors, under venitian blinds or drapes, or covered with a flap of plain poster board. The weeks of the school year are placed across the top of the chart. Information concerning the referral, process through assessment, intervention, goal attainment or special class placement are marked by

date. Objectives selected for each student can be assessed on any schedule desired and are recorded by the categories described on page 15. Appendix E is a form designed to supplement the chart. This form describes the goals and objectives for each child's intervention plan. It is the psychologist's working notes on the intervention goals set for each student.

A program effectiveness tracking system designed by Tomlinson used data cards to record goal attainment and additional information to identify children within an entire school system (Tomlinson, 1974). These cards could be used in subsequent computer tabulation and analysis to evaluate psychological services on a system-wide scale.

No behavior exists without contingencies to maintain it. The school administration, of course, controls many of the contingencies for school personnel. If an organized and effective system of monitoring and evaluating intervention efforts with children is to be maintained, the administration must provide vigorous and visible support. If the administration does not attend to outcome evaluation, such evaluation will not occur.

FOOTNOTES

[1]No matter which category of individual change measure the program evaluator has to work with, the probability that the mean change score occurred by chance could be determined statistically through the use of the appropriate control groups. However, excepting demonstration programs most programs do not collect control group data.

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Appendix A

SELECTING THE TIMELINE

First decide how long a similar treatment program might take if conditions were ideal. You should probably find an answer to this question in studies which have been published. Then fill out the checklist below. The more checks you have made to the right hand margin, the longer the time you should expect your treatment to take to reach the desired behavioral level. For example, if a similar program reported in the literature took 4 weeks; and all your checks are on the right hand margin, you might expect to take 8 or 12 weeks to reach the same goal.

	Yes	No
student/teacher ratio is low		
a teacher's aide is always present		
the teacher has the child most of the day		
the teacher is able to follow instructions		
other (non-classroom) demands on the teachers time are minimal, e.g. teacher is not an NEA representative		
no other advisors are giving the teacher conflicting advice		
the teachers teaching style is flexible, (s)he is able to incorporate new or additional procedures into her class		
for the most part, the teacher reinforces appropriate rather than inappropriate behavior		
the classroom and lessons are usually well organized		
few other children in the classroom are management problems		
the teacher's style is generally compatible with the proposed treatment procedures (are you asking a teacher who usually relies on aversive control to start a reinforcement program?)		
the teacher does not receive reinforcers from other teachers or from the administration for having a problem child		
the teacher has a general familiarity with the proposed treatment procedures		
the child's peers do not reinforce inappropriate behavior		
the child's peers model the appropriate behavior		
any necessary support from the home will be supplied		
it is possible to identify reinforcers for the child in the classroom		
the behavior problem has not been in the child's repertoire for long		
the behavior is not occurring at a very high rate		
the psychologist has had previous experience with the proposed treatment program		

Appendix B

PROGRAM MONITORING FORM

Student _____ School Psychologist _____

Teacher _____

1. Success Indicator _____

   Baseline level _____

   Final objective _____

Evaluation Dates					
Sub-objectives					
Ratings					

2. Success Indicator _____

   Baseline level _____

   Final objective _____

Evaluation Dates					
Sub-objectives					
Ratings					

3. Success Indicator _____

   Baseline level _____

   Final objective _____

Evaluation Dates					
Sub-objectives					
Ratings					

Appendix C

GOAL ATTAINMENT SYSTEMS

Goal Attainment Scaling

Goal Attainment Scaling (GAS), developed at the Hennepin County, Minnesota, Mental Health Center, was the most thoroughly investigated of the five goal planning and measurement systems described here. The latest GAS bibliography contained over 200 references (Program Evaluation Resource Center).

First the therapist delineated several areas (up to five) which were problematic to the client, for example, fear of sexual involvement, dependency on mother, decision making, anxiety of MMPI scores. These areas were then weighted by the therapist according to his or her perception of their importance to the overall functioning of the client, e.g., 20, 30, 20, 30 and 10 respectively. Weights did not need to sum to any fixed total. Next a measurement indicator was selected for each problem area and five possible outcomes were selected for each measurement indicator, ranging from -2, the most unfavorable outcome; through 0, the expected outcome, i.e., the client's objective; to +2, the most favorable outcome. The measurement indicator could be a single dimension, for example the measurement indicator for anxiety might be episodes of public giggling: the most unfavorable outcome being seven or more episodes per week and the most favorable outcome being no episodes. The measurement indicator might also consist of a series of different behaviors. For example, the measurement indicator for dependency on mother might include "living at home" as the most unfavorable outcome and "establishing own way of life and choosing when to consult mother" as the most favorable outcome. All the above information was arranged on the Follow-up Guide. During intake procedures, the client's current level of functioning was rated as -2, -1, 0, +1, or +2 in relation to each problem on the Follow-up Guide and an overall T score was calculated. At

Sample Goal Attainment Scaling *

Goal Weights / Outcome Value	Goals: Fear of Sex Involvement 20	Dependency on Mother 30	Decision-making 20	Social Functioning 30	MMPI - 78 10
Most unfavorable treatment outcome thought likely (-2)	Avoidant No dating No sex	Likes at home Does nothing without mother's approval	No new decisions made, still weighing same alternatives (job, vocation)	Institutionalized prison or hospital	Up at all over previous score
Less than expected success with treatment (-1)			Complains of being unable to make up mink	On probation Further arrests	Remains in double prime range
Expected level of treatment success (0)	Dating Petting	Chooses own friends, activities without checking with mother	Makes up mind on vocation, other major items	On probation No further arrests for peeping	Mid 60's T-score
More than expected success with treatment (1)	Some satisfactory intercourse	Returns to school		No contact with police, states peeping no longer a problem	
Best ancitipated treatment success (2)	Regular dating Regular satisfactory intercourse Marriage	Establishes own way of life Chooses when to consult mother			40-60 T-score

*Kiresuk, T.J. & Sherman, R.E. Goal Attainment Scaling: Method for Evaluating Comprehensive Community Mental Health Program. Community Mental Health Journal, 1968, 4, 443

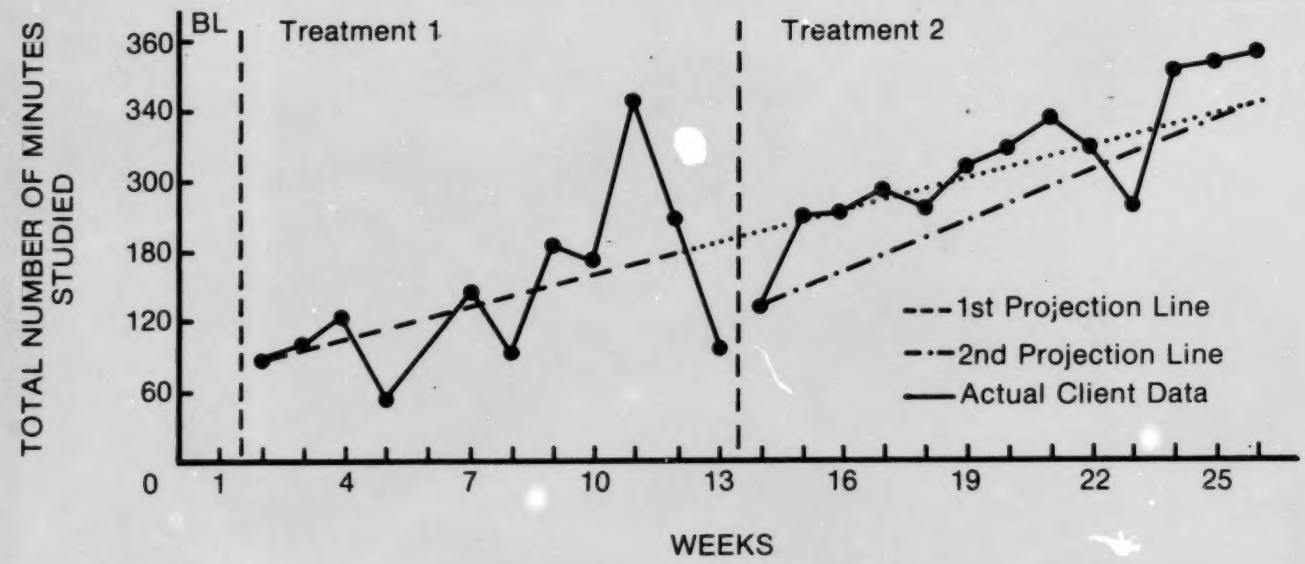
the end of the timeline, the client was rated on the same Follow-up Guide by a follow-up interviewer and a second T score was calculated. The agency's outcome measure was either the mean follow-up T score for all clients or the mean difference between the intake and follow-up T scores (Kiresuk & Sherman, 1968; Garwick, 1976a).

Rinn's Goal Attainment System

Rinn's Goal Attainment System (RGAS) was developed in the context of parent training classes at the Huntsville-Madison County Mental Health Center in Alabama. Parents recorded the frequencies of various problem behaviors exhibited by their children. After the baseline level of a given behavior was determined (baseline usually lasted a week) a quantitatively stated objective was selected. The percent of each objective attained was measured at the termination of treatment by dividing (the median of the consequated behavior minus the median of the baseline behavior) by (the objective minus the median of the baseline behavior) and multiplying by 100. The median of the consequated behavior was usually based on the last week of treatment. For example, if the median baseline data point was five tantrums per day, the objective was zero trantrums per day and the median during the last week of treatment was one tantrum per day, then 80% of the client's objective would have been attained

$$\left(\frac{1-5}{0-5} \times 100 = 80\%\right).$$

The agency's outcome measure consisted of a frequency distribution which indicated the percent of client objectives which were 68-100% attained, 33-67% attained and 0-32% attained. Ninety-two percent of the clients' objectives fell into the first category (Rinn, Vernon & Wise, 1975). RGAS


TOTAL NUMBER OF MINUTES STUDIED
BL
Treatment 1
Treatment 2
360
340
300
180
120
60
0
1
4
7
10
13
16
19
22
25
WEEKS
1st Projection Line
2nd Projection Line
Actual Client Data

has been used with problems other than parent/child interactions and in other settings, e.g., the out-patient clinic, in the Mental Health Center (Rinn, Loughead & Owen, in press).

The Projection Line System

This system was developed at the Center for Human Development at Drake University. Baseline observations were made and graphed by student-therapists, objectives were selected and discussed with clients and timelines were established. Objectives were then plotted on the clients' graphs. For example, if an adult male was observed to have vomited frequently in certain situations during 10 days of baseline; if the objective was that he cease vomiting; and if the therapist thought that could be accomplished in six weeks, then the objective was plotted at the intersection of 0 on the ordinate and day 52 on the abcissa. Next a straight line, the projected path of client progress, was drawn from the first treatment data point to the objective. Actual client data were subsequently plotted on the same graph. Each time an actual data point was added to the graph it was seen in relation to the client's expected progress on that date. A data point which was not on or above the projection line in an acceleration project cued the therapist to consider remedial steps. The agency calculated two outcome measures. The percent of a given client's data points which were on the appropriate side of the projection line was calculated at the termination of treatment and served as a measure of goal attainment for the therapist and/or client. The percent of all of the clinic's data points which were on the appropriate side of the projection line was calculated each week and served as a measure of the agency's treatment effectiveness. Over the final six semesters reported, approximately 85% of the data points generated in the clinic each week were on the appropriate side of the projection line (Lloyd, Mitchell, Realon & McKinney, in press).

Name	Staff	Weeks of the

School Year	Program	Teacher

CODING SYSTEM FOR MONITORING CHART (APPENDIX D)

This page presents the codes used in Appendix D, the Monitoring System chart presented on page 36-37 and described in the text of this publication on page 19.

The Monitoring System utilizes a code to keep track of the stage of service for each students. This provides an instant visual display of the status of services for all students in a given school. The codes are used on the grid according to the week in which the service occurred for a particular student.

The codes include the use of: (1) letter designations, (2) colored press-on dots and numerical ratings. The codes could, of course, be adapted, but the codes currently being utilized are as follows:

Colored press-on circles			Letter		
Green	=	Referral received	E	=	Evaluation procedures
Red	=	Screening meeting	CO	=	Classroom observation
Yellow	=	Permission to eval.	PC	=	Parent contact
Blue	=	Staffing meeting	TC	=	Teacher interview
Brown	=	Staffings held			
Coral	=	Placement resulted			
Silver	=	Student transfers			

Numerical ratings of goal attainment

As goals are specified for a student they are designated A, B, C, etc. Then, progress toward the attainment of the goal is monitored with the following numerical references.

1 = Behavior reached and maintained at the desired level.
2 = Behavior changed significantly in the desired direction but further change is desired.
3 = No significant changes in the behavior occurred.
4 = Behavior changed in an undesired direction.

Thus, you might find progress of a student's goal attainment coded in the following manner for a 5 week period.

10/27	11/3	11/10	11/17	11/24
A2,B3	A2,B3	A1,B3	A1,B2,C3	A1,B2,C4

A completed copy of a Monitoring System chart will be provided to the AEA supervisors of psychological services in Iowa, August, 1981. See the supervisor for this example if you wish to review this detailed illustration of the Monitoring System.

MONITORING FORM FOR
INTERVENTION PLAN: STUDENT: *Bobby Hayes* MODIFIER: *Mrs. Cornforth*

GOAL: *Increase appropriate classroom behavior*

CODE: 1. behavior reached and maintained at desired level
2. behavior changed significantly in desired direction, further change desired
3. no significant change in behavior occurred
4. behavior changed undesired direction

DATE BEGUN BASE LINE		OBJECTIVES/ TIME LINES	NOTES:
10/20 30%	A.	*Complete 75% reading assign. Four weeks*	*10/27 50% completed - add home consequence 11/3 62% home program not consistent 11/10 100% complete 11/17 80% 11/24 82%*
10/20 16 aver.	B.	*Out of seat during reading workbook-less than 5 times Seven weeks*	*10/27 high rate - teacher lost count 11/3 switch to time sampling/mean=17 11/10 now out of seat after completing assignments, give him a desirable activity 11/17 mean = 11 11/24 mean = 9, range 2 to 12*
11/10 22 aver.	C.	*less than 12 talk outs per day Seven weeks*	*11/17 mean = 13 11/24 mean = 27*
	D.		

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